Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Please cancel claim 1 without prejudice or disclaimer.

Listing of Claims:

1-14 (Canceled)

15. (New) An aberration detection device comprising:

a radiation source for emitting a light beam;

an object lens for focusing the light beam on an information carrier;

a light deflector for partitioning a returning light beam that has been reflected by the information carrier and passed through said object lens into a first light beam passing a first region and a second light beam passing a second region, and diffracting the first light beam that has passed the first region away from said radiation source; and

a first light detector for receiving the first light beam and a second light detector fro receiving the second light beam;

wherein said first light detector and said second light detector each comprise a photo-detector partitioned into at least two portions,

said first light detector and said second light detector are arranged such that the first light beam and the second light beam are each irradiated onto a corresponding partition line of said first light detector and said second light detector,

the object lens has a numerical aperture of at least 0.6, and

a spherical aberration, a coma aberration or an astigmatism is detected and identified individually from an output signal from said first light detector and said second light detector.

16. (New) The aberration detection device according to Claim 15, wherein the first region is partitioned by a circle whose center is an optical axis of the returning light beam, and

a difference between a focus position of the first light beam and a focus position of the second light beam is detected from the output signal from said first light detector and the output signal from said second light detector, thereby detecting the spherical aberration.

17. (New) An optical information reproducing apparatus comprising:

the aberration detection device according to Claim 15;

wherein information recorded in the information carrier is reproduced.

18. (New) An optical information reproducing apparatus comprising:

the aberration detection device according to Claim 15; and

an aberration correction system for correcting an aberration, disposed on an optical path of an incoming light beam from the radiation source to the information carrier;

wherein information recorded in the information carrier is reproduced.

19. (New) An aberration detection device comprising:

a radiation source for emitting a light beam;

an object lens for focusing the light beam on an information carrier;

a light deflector for partitioning a returning light beam that has been reflected by the information carrier and passed through said object lens into a first light beam passing a first region and a second light beam passing a second region, and diffracting the first light beam that has passed the first region away from said radiation source; and

a first light detector for receiving the first light beam and a second light detector for receiving the second light beam;

wherein said first light detector and said second light detector each comprise a photo-detector partitioned into at least two portions,

said first light detector and said second light detector are arranged such that the first light beam and the second light beam are each irradiated onto a corresponding partition line of said first light detector and said second light detector,

an optical system is configured such that a spherical aberration WEF(SA) is at least 35 mλ, where WFE(SA) is the spherical aberration generated by a portion of the information carrier passed by the light beam and λ is the wavelength of the light beam, and

the spherical aberration is detected and identified from an output signal from said first light detector and said second light detector.

20. (New) The aberration detection device according to Claim 19, wherein the first region is partitioned by a circle whose center is an optical axis of the returning light beam, and

a difference between a focus position of the first light beam and a focus position of the second light beam is detected from the output signal from said first light detector and the output signal from said second light detector, thereby detecting the spherical aberration.

21. (New) The aberration detection device according to Claim 19, wherein the information carrier has a plurality of information recording layers, and

a difference in the information recording layers onto which the light beam is focused causes a difference in an optical distance in the information carrier along which the light beam passes, and this difference in the optical distance generates the spherical aberration WFE(SA).

22. (New) The aberration detection device according to Claim 19, wherein a layer in the information carrier through which the light beam passes has a varied thickness, and

a difference between a maximum value and a minimum value of the thickness of the layer generates the spherical aberration WFE(SA).

23. (New) An optical information reproducing apparatus comprising:

the aberration detection device according to Claim 19;

wherein information recorded in the information carrier is reproduced.

24. (New) An optical information reproducing apparatus comprising:

the aberration detection device according to Claim 19; and

an aberration correction system for correcting an aberration, disposed on an optical path of an incoming light beam from the radiation source to the information carrier;

wherein information recorded in the information carrier is reproduced.

25. (New) An aberration detecting device comprising:

a radiation source for emitting a light beam;

an object lens for focusing the light beam on an information carrier;

a light deflector for partitioning a returning light beam that has been reflected by the information carrier and passed through said object lens into a first light beam passing a first region and a second light beam passing a second region, and diffracting the first light beam that has passed the first region away from said radiation source; and

a first light detector for receiving the first light beam and a second light detector for receiving the second light beam;

wherein said first light detector and said second light detector each comprise a photo-detector partitioned into at least two portions,

said first light detector and said second light detector are arranged such that the first light beam and the second light beam are each irradiated onto a corresponding partition line of said first light detector and said second light detector,

said first light detector and said second light detector are arranged adjacent to each other, and

a spherical aberration, a coma aberration or an astigmatism is detected and identified individually from an output signal from said first light detector and said second light detector.

26. (New) The aberration detection device according to Claim 25, wherein the first region is partitioned by a circle whose center is an optical axis of the returning light beam, and

a difference between a focus position of the first light beam and a focus position of the second light beam is detected from the output signal from said first light detector and the output signal from said second light detector, thereby detecting the spherical aberration.

27. (New) An optical information reproducing apparatus comprising:

the aberration detection device according to Claim 25;

wherein information recorded in the information carrier is reproduced.

28. (New) An optical information reproducing apparatus comprising:

the aberration detection device according to Claim 25; and

an aberration correction system for correcting an aberration, disposed on an optical path of an incoming light beam from the radiation source to the information carrier;

wherein information recorded in the information carrier is reproduced.

29. (New) An aberration detection device comprising:

a radiation source for emitting a light beam;

an object lens for focusing the light beam on an information carrier;

a light deflector for partitioning a returning light beam that has been reflected by the information carrier and passed through said object lens into a first light beam passing a first region and a second light beam passing a second region, and diffracting the first light beam that has passed the first region away from said radiation source; and

a first light detector for receiving the first light beam and a second light detector for receiving the second light beam;

wherein said first light detector and said second light detector each comprise a photo-detector partitioned into at least two portions,

said first light detector and said second light detector are arranged such that the first light beam and the second light beam are each irradiated onto a corresponding partition line of said first light detector and said second light detector,

the partition line of said first light detector and the partition line of said second light detector are arranged on a common straight line, and

a spherical aberration, a coma aberration or an astigmatism is detected and identified individually from an output signal from said first light detector and said second light detector.

30. (New) The aberration detection device according to Claim 29, wherein the first region is partitioned by a circle whose center is an optical axis of the returning light beam, and

a difference between a a focus position of the first light beam and a focus position of the second light beam is detected form the output signal form said first light detector and the output signal from said second light detector thereby detecting the spherical aberration.

31. (New) An optical information reproducing apparatus comprising:

the aberration detection device according to Claim 29;

wherein information recorded in the information carrier is reproduced.

32. (New) An optical information reproducing apparatus comprising:

the aberration detection device according to Claim 29; and

an aberration correction system for correction an aberration, disposed on an optical path of an incoming light beam from the radiation source to the information carrier;

wherein information recorded in the information carrier is reproduced.

33. (New) An aberration detection device comprising:

a radiation source for emitting a light beam;

an object lens for focusing the light beam on a information carrier;

a light deflector for partitioning a returning light beam that has been reflected by the information carrier and passed through said object lens into a first light beam passing a first region and a second light beam passing a second region, and diffracting the first light beam that has passed the first region away from said radiation source; and

a first light detector for receiving the first light beam and a second light detector for receiving the second light beam;

wherein said first light detector and said second light detector each comprise a photo-detector partitioned into at least two portions,

said first light detector and said second light detector are arranged such that the first light beam and the second light beam are each irradiated onto a corresponding partition line of said first light detector and said second light detector,

said first light detector and said second light detector are arranged on the same side with respect to a plane including an optical axis of a light beam, passing through the light deflector without being deflected, in the returning light beam, and

a spherical aberration, a coma aberration or an astigmatism is detected and identified individually from an output signal from said first light detector and said second light detector.

34. (New) The aberration detection device according to Claim 33, wherein the first region is partitioned by a circle whose center is an optical axis of the returning light beam, and

a difference between a focus position a of the first light beam and a focus position of the second light beam is detected from the output signal from said first light detector

and the output signal from said second light detector, thereby detecting the spherical aberration.

35. (New) An optical information reproducing apparatus comprising:

the aberration detection device according to Claim 33;

wherein information recorded in the information carrier is reproduced.

36. (New) An optical information reproducing apparatus comprising:

the aberration detection device according to Claim 33; and

an aberration correction system for correction an aberration, disposed on an optical path of an incoming light beam from the radiation source to the information carrier;

wherein information recorded in the information carrier is reproduced.